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NOTE ON A FEW OF THE USEFUL PLANTS OF NORTHERN JAPAN.

BY PROFESSOR D. P. PENHALLOW.

THE object of the following lines is, not so much to draw attention to the plants which are generally recognized as of great value to man, as it is to bring to notice plants less widely known for their useful properties and in which special interest centers, either from the novelty of their use or the fact that, while but little known, they possess qualities which, under the improvement of cultivation, would render them highly desirable acquisitions wherever they can be grown.

Depending upon the natural products of the uncultivated soil to supplement the products of the chase, the aborigines of Yesso have long since discovered whatever plants are of real value, either as articles of food, or as furnishing material for their few and simple manufactures, and some of these they have turned to such good account, that they are worthy of more than casual notice.

Various species of Lilium abound throughout the forests, and all those which furnish a sufficiently large bulb, are utilized as a source of farinaceous food. Early in autumn the women may be seen returning to their villages loaded with bulbs. These are thoroughly crushed in a large wooden mortar, after which the starch is separated from the cellular mass by repeated washing. The former is then dried and hung up in bags for winter use, while the latter is dried in round, perforated cakes somewhat resembling miniature mill-stones, and hung up to dry. Later, it serves as food for the Aino and for the caged bears which are generally to be met with wherever there is a small settlement. The Japanese hold the lily bulbs, as a source of farinaceous food, in great esteem, and the demand for them is so great that they are cultivated *(L. bulbiferum)* in large quantities and form one of the prominent farm products to be seen in the market. The bulbs are simply boiled and eaten as potatoes would be. From personal experience we are able to certify as to their qualities. It is somewhat more difficult, however, to give testimony bearing upon the flavor and desirable qualities of flowers and buds from various species of Hemerocallis. In certain sections of the island, particularly on the pumice formation of the east coast, these plants are particularly abundant, and at the time of blossoming, the fields, for miles along the road on either side, are an almost uniform golden yellow. At such a time the Aino women may be seen busily engaged gathering the flowers which they take home and dry, or pickle in salt. They are afterwards used in soups. I have been told that the Japanese make a similar use of them, but probably only to a very limited extent.

In the *Pitasites japonicus* Miq., or fuki, both Japanese and Aino find an article of food which they seem to hold in high esteem. During early summer, the leaves make a very rank growth, often reaching a height of three feet. While in the early stages of growth, the petioles are succulent and crisp, and are largely used in soups. They are devoid of flavor and it is difficult to conceive what quality they possess which should recommend them as an article of food. The fact remains, however, that they are not only collected from the woods, but the plants have even been brought into cultivation expressly for their succulent petioles. The fuki is common everywhere in Yesso, being abundant not only in the villages, but it is found to extend well up the mountain slopes and frequently occurs at an elevation of 3000 feet.

Not less interesting is the similar use which the Japanese make of the bur-dock root, *Lappa major* Gaert., which attains great length under cultivation, but as an article of food is tasteless, hard and fibrous.

The horned fruits of the *Trapa bispinosa* Roxb., var. *incisa*, which is common in all the large ponds, are largely used by the Aino, and to some extent by the Japanese, for food.

Turning our attention to those plants which yield something of more evident value, we find in the *Actinidia arguta*, or kokuwa, a vine which gives promise of being a valuable acquisition to our New England flora. The vine is common in all the valleys of Yesso, and extends southward to Central Niphon. Vigorous in growth and fruiting abundantly, it can be trained like a grapevine. The fruit is an oblong, greenish berry about one inch in length. The pulp is of uniform texture, seeds minute and skin thin. When fully ripe they possess a very delicate flavor. Aside from its fruit, the plant is of value as an ornamental vine, on account of its fine foliage. A somewhat less desirable plant is found in its congener, *A. polygama*, which grows in more elevated places, fruits less abundantly and is not so rich in foliage.

Arundinaria japonica is so abundant everywhere, from bottom lands to the summits of mountains over 4000 feet in height, and its rhizomes form such a strong network just below the surface, rendering it exceedingly difficult to properly clear the land and plough it, that the plant, from the farmer's standpoint, is regarded as an intolerable nuisance; nevertheless it possesses some qualities which render it of considerable value. Like the true bamboo, the wood is exceedingly strong and elastic, and finds many useful employments in a variety of manufactures. It likewise serves as an important material in the construction of houses and fences. During the winter months, when all else is covered with snow, the yet green, though dry and silicious leaves furnish almost the only food for the numerous wild deer, and constitute a very large part of the diet of the hard-worked and much-abused pack-horses. When the young shoots appear in early summer, they are carefully gathered, and under the name of *take-no-ko* are used for food as we would employ young asparagus; though by no means so tender as the latter, they make a very desirable dish.

The clothing of the Aino, though to some extent made of cotton cloth obtained from the Japanese, is almost entirely a product of their own industry, and made of such material as can be found in the fibers of wild plants.[1] The fiber for their cloth is obtained from both the *Ulmus campestris* and *U. montana*.

The long leaves of the *Typha latifolia*, or kina, serve the same people with most admirable material for floor mats. Each summer long excursions are made to the localities where the plant is particularly abundant, and large quantities of leaves are gathered and prepared for winter employment.

The bark and leaves of *Prunus padus* have long furnished the principal medicine in use by the Aino, and it is interesting to observe that they have been employed in precisely those disorders for which our *P. virginiana* bark is used.

Another plant which is held in high esteem for its medicinal properties, is a species of Acorus, the roots of which are employed in cases of dysentery with good effect.

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[1] See AMERICAN NATURALIST for August, 1880.